

V. *Descriptions and remarks upon five new Noctuid moths from Japan.* By ARTHUR G. BUTLER, F.L.S., F.Z.S., &c.

[Read April 7th, 1886.]

THE species here described have been recently received from Messrs. Henry Pryer and George Lewis, who collected them personally in Japan.

The difficulty of dealing with aberrant types of familiar genera, owing to the present imperfect definition of many groups of *Noctuities*, is at once apparent when one has to decide with what genus such a species as the first here described has the highest claim to be associated: that structural characters, as hitherto studied, are insufficient to decide the point, is evident: that characters exist in the present case, which can only be examined by destroying the type-specimen, is probable from the bizarre aspect of the insect; but that this can only be done where there are plenty of specimens to sacrifice, is equally a lamentable fact.

COSMIIDÆ.

Cosmia curvata, n. s.

In form and general coloration like *Cerastis spadicea*, the outer margin of the primaries even more sinuous; in structure almost identical with *Orthosia suspecta*;* primaries sericeous, purplish slate-coloured with the exception of a submarginal band and the fringe, which are bronze-brown; ordinary lines black, slender, with whitish inner edges; the first subbasal, angular, the second at basal third, oblique and slightly curved, the third just beyond the external third, nearly straight, but with a slight sinus at the point where it is crossed by the first median branch; a fourth indistinct line, limiting the external border, nearly straight from costal

* In neuration I can find no difference between *Cosmia*, *Orthosia*, and *Cerastis*, the primaries having five subcostal branches, all but the first starting from a post-discoidal cellule; the lower radial and second and third median branches being also emitted close together.

margin to third median branch, and thence undulated to inner margin; discoidal spots outlined in white; secondaries sericeous bronze-brown, darker towards the outer margin; fringe whity-brown, traversed by a dark brown line; body brown, the abdomen greyer than the thorax; under surface whity-brown, sericeous, with golden-bronze reflections; primaries, with the exception of the borders, suffused with blackish, and showing darker indications of the third and fourth lines of the upper surface; secondaries crossed by two irregular ill-defined dusky stripes. Expanse of wings, 29 mm.

Fukushima, 28th July, 1881 (*G. Lewis*); Yokohama (*H. Pryer*).

Mr. Pryer regards this as a *Noetua*: in pattern above it is most like a *Mesogona*, excepting in the border of the primaries, which is like that of an *Orthosia*: in some respects it is more like a *Cerastis* than a *Cosmia*, but the palpi correspond with those of the latter genus: singularly enough it agrees in most respects with the Notodontid genus *Beara*, but the flatter thorax, more prominent head, longer palpi, and the little cross-veinlet in the primaries forming the post-discoidal cellule, sufficiently distinguish it.

It is strange that neuration should repeat itself, as it does, in widely distinct families; in the present instance, however, the families are more nearly allied than they sometimes are: neuration, though invaluable as a generic character, cannot be used by itself for the definition of families, for, though it may serve to distinguish some, it will equally unite others which are far more distinct; the little cell above or beyond the discoidal cell, and which has been called "post-discoidal," occurs in many groups of *Bombycina*, *Geometrina*, and *Noctuina*. The number of median branches to the secondaries (the radial when approximated to the third median being called a fourth) is not an invariable character, there being *Geometrina*, both with three and four so-called "median branches"; whilst *Argyria*, which appears to be a Drepanulid (as I shall presently attempt to prove), corresponds closely, not only in neuration, but in every other respect, with *Somatina*, has only the normal Geometrid arrangement of three median branches, and, apart from its great resemblance to *Cilix*, fully justifies M. Guénée's decision that it belonged to the *Geometrina*: at the same time it possesses the same number of veins

as *Cilix*, has nearly the same arrangement of veins in the primaries, the principal difference consisting in the weak character of the disco-cellular veinlets and, in the secondaries, in the different relative position of the subcostal and median branches, which thus necessitates an alteration in the form of the discoidal cell; such distinctions, though wide enough to separate some families (as in the case of the *Enochromiidae* among the *Geometrina*), cannot be admitted to be of sufficient importance to enable one to place *Argyria* and *Cilix* in two tribes so wide apart as the *Geometrina* and *Bombycina*. On the other hand, the genus *Teldenia* (proved by breeding to be a true Drepanulid), which is even more Geometriform than *Argyria*, is intermediate in the character of its wing-veins between the latter and *Cilix*, whilst the genera *Macrocilix* and *Auzata*, formerly associated with *Argyria* and placed among the *Geometrina*, are in all their structural characters essentially *Drepanulidae*.

Whether *Somatina* should also be placed in the latter family or not cannot be decided without breeding it; but, if I am right in locating *Argyria* there, it would indeed be strange that a genus almost identical with it in the imago condition should belong to so widely distinct a tribe as the *Geometrina*; nevertheless, it should be borne in mind that structural characters in the imago stages of the Heterocera have not enabled even the best and most painstaking lepidopterist to assign certain genera to their natural positions, the genus *Euphanessa*, hitherto referred to *Bombycina*, but now proved to belong to the *Geometrina*, being a case in point.

That the number of branches to the median vein of the secondaries should be regarded as *invariably* of the highest importance, will at once be seen to be absurd by anyone who examines the whole of the genera of *Zygaenidae*, in which the median branches vary from two to four, and the total number of veins in the secondaries from five to eight.

Therefore, although it is as a rule safe to assume, because of a certain combination of characters in the imago, that a moth belongs to such and such a family, the existence of many aberrant forms, of which the life-history is known, and their natural position

therefore finally decided, renders any attempt to found a system of classification upon the external structure of the imago alone wholly futile.

HADENIDÆ.

Epia claripennis, n. s.

Allied to *E. cchii* of Europe; of the same size and with nearly the same pattern; the markings of the primaries are, however, more diffused and consequently less sharply defined, the discoidal spots are grey with white margins, the "orbicular" being oval, oblique, and diverging from the "reniform" spot, which is also less angular than in *E. cchii*; below the "orbicular" spot and upon the interno-median area is an oblong blackish spot (as in *Dianthezia capsineola*), followed by a small fusiform white spot; below the latter there are no more white markings upon the central belt, the white internal patch which occurs in *E. cchii* being absent; the white maculation of the fringe appears also to be wholly absent; the secondaries are white instead of grey, very glossy, and with a faint golden appearance in certain lights, the discal line and outer border are faintly indicated in grey; the body is sordid whitish, the collar marked on each side with a little arched line; on the under surface the differences are more marked, the primaries being greyish white to beyond the cell, the disc grey, and the outer border pale greyish brown; the disco-cellular lunule is grey; secondaries with the discal lines much less distinct and nearer together than in *E. cchii*; tibiae and tarsi of front legs greyish in front; not distinctly banded as in the European species. Expanse of wings, 29 mm.

Nikko (*H. Pryer*).

Dichonia intermissa, n. s.

Intermediate in some respects between *D. convergens* and *D. protea*; in pattern, both above and below, most like the former, but in the colouring of the primaries approaching the latter; the form of the discoidal spots, the presence of a pale spot below the "orbicular," and the well-defined marginal black dots also correspond with *D. protea*; the pale scales on the primaries are, however, of a yellowish brown, rather than greenish tint, and the reniform spot and the disc towards external angle are sprinkled with rust-red scales, somewhat as in *D. convergens*; the lines which bound the central belt are wider apart than in either species, and resemble those of *D. geniste*; the secondaries are of a smoky-

grey tint, gradually darkening from the base to the outer margin; the fringe white, traversed by a black line; under surface smoky grey, the centre of the secondaries whitish, so as to show clearly a small black disco-cellular crescent; other markings obsolete. Expanse of wings, 38 mm.

Japan (*H. Pryer*).

In Staudinger's Catalogue I find that the three species above referred to are placed in three separate genera—*D. convergens* in *Dichonia*, *D. protea* in *Dryobota*, *D. genistæ* in *Mamestra*, but why is not stated; and, after carefully comparing their structure, I fail to see any justification for such a proceeding. M. Guénée placed all three in *Hadena*, and indicated *H. w-latinum* (= *genistæ*) as type, though the latter was not originally recorded as a member of the genus in Schrank's enumeration of the species: the actual type of *Hadena* appears to be *H. cucubali*, so far as I have been able to ascertain;* the latter was originally associated by Boisduval with other clearly heterogeneous forms, as representing his genus *Dianthæcia*, and has subsequently been placed in the latter group.

PLUSIIDÆ.

Plusia humeralis, n. s.

Nearly allied to *P. chryson*; of the same size, form, and general pattern, but the primaries without the golden patch, with the basal area lilacine grey, crossed close to the base by a blackish line, and just beyond this by a tapering blackish band; central area more purplish in tint, with the three lines much darker, and the outermost of the three less strongly undulated; external and apical areas more bronzy, very glossy; secondaries whiter, the line and border better defined; thorax duller in tint, abdomen whiter; under surface cream-coloured instead of ochreous, but in other respects similar. Expanse of wings, 49 mm.

Yezo (*H. Pryer*).

POLYDESMIDÆ.

Polydesma vulgaris, n. s.

Primaries above greyish or cupreous-brown, always pale and more or less sericeous, crossed by numerous ill-defined brown or

* Mr. Kirby has kindly assisted me in looking up the probable type of *Hadena*, but we have not been able to give sufficient time to the matter to come to any final decision.

reddish dentate-sinuate stripes, which, however, frequently are wholly lost in the ground colour; two reversed dentate-sinuate darker lines or two stripes slightly paler than the ground colour indicate the limits of the central belt; the orbicular spot is usually ill-defined or absent, but sometimes represented by a whitish spot; the reniform spot is oblique, large, usually whitish, but sometimes ochreous, though always with a white or whitish external edging; the outer line or stripe bounding the central area occasionally has its dentate character defined by a series of black points at the extremities of the denticles; so far all the characters are variable and inconspicuous; the following characters are always better marked—a dark brown almost semicircular basi-costal patch, an unequally quadrate costal patch of the same colour beyond the cell, an irregular more or less dusky outer border bounded internally by a paler stripe, two more or less defined hastate black dashes on the radial interspaces interrupted by the submarginal pale stripe; a marginal series of black crescentic dots with pale inner edges and several dusky or blackish costal dashes; secondaries varying from grey to brown, always sericeous, and with pale golden or bright cupreous reflections, a more or less distinct darker diffused external border; an ill-defined marginal series of blackish dots; fringe whitish; body whity-brown; head, collar and tegulæ dark brown, varying in accordance with the colour of the primaries from greyish to reddish; under surface varying from whitish to bronze-brown; primaries with the central area slightly greyish; all the wings with a blackish disco-cellular spot and two parallel discal lines from costal to inner margins. Expanse of wings, 34—50 mm.

Male and female, Tokei (*C. Marics*); female, Chekiang (*W. B. Pryer*); male and female, Yokohama (*H. Pryer*).

This perfectly typical *Polydesma* is noted by Mr. H. Pryer as a *Nylophasia*. It is an unusually variable species.